# Redescription of *Pelochrista maculiferana* (Kennel, 1900), bona sp., with notes on eight poorly known species of leaf-rollers from the Volgo-Ural region (Lepidoptera: Tortricidae)

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**Abstract.** The status of *Pelochrista maculiferana* (Kennel, 1900), bona sp., comb. nov., which was until now considered a synonym of *Epiblema junctanum* (Herrich-Schäffer, 1856), is revised and this species, now considered a good species, is redescribed. Additionally, notes on eight poorly known species of Tortricidae from the Volgo-Ural region are provided. *Lobesia subherculeana* (Filipjev, 1924), *Asketria lepta* Falkovitsh, 1964, *Eucosma pergratana* (Rebel, 1914), and *Dichrorampha alaicana* (Rebel, 1910) are reported as new to Europe, and *Eucosma medvedevi* (Gerasimov, 1928), *Clepsis nybomi* (Hackman, 1950), and *Asketria lepta* Falkovitsh, 1964 as new to Russia. The adults of seven of these species and the genitalia of four of them are illustrated.

## Introduction

The leaf-roller (Tortricidae) fauna of the Volgo-Ural region is moderately well known. Eversmann (1844) made thorough faunistic investigations mainly in the southern Urals in the middle of the 19th century and listed 132 species of Tortricidae for this region. The vicinity of Sarepta in the Lower Volga region was intensively studied at the end of the 19th century by Hugo Christoph (Amsel 1964) and some other entomologists, and numerous new species were described from there (Christoph 1872; Kennel 1900; Staudinger 1871, 1877). From the beginning of the 20th century there have been no serious studies of microlepidoptera in the Volgo-Ural region until 1996, when research in the southern Urals was commenced by the author and several colleagues. The majority of the findings from about 30 expeditions made between 1996 and 2011 in the region remain unpublished. Anikin et al. (2006) summarised the data on Tortricidae from the Volgo-Ural region, which include 510 species. However, their list lacks several species recently recorded in the steppes of the southern Urals. In the present article, faunistic and/or taxonomically significant new records of nine species of Tortricidae from the region are reported.

## Material and methods

This contribution is based on material collected by the author during 1996–2006 on about 30 expeditions to the southern Urals and the Lower Volga region, three of them joint with Timo Nupponen. The material was collected both by artificial light (ultraviolet tube lamps: Philips TL K 40W/ 09N, Sylvania blacklight 20W & 40W/350 BL; solar lamp Osram Ultra Vitalux 300W) at night and by netting and sweeping during the daytime. The material is deposited in the private collection of T. & K. Nupponen. The

**Fig. 1.** Rocky steppe slopes in Guberlinsky Mountains, the southern Ural range, Russia. Habitat of *Pelochrista maculiferana* (Kenn.). **Fig. 2.** Chalk steppe in Schibendy Valley, the southern Ural range, Russia. Habitat of *Asketria lepta* Flkv. and *Lobesia subherculeana* (Fil.). (Photos: K. Nupponen).

following abbreviation is used in the text: ZIN (Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia).

## Systematics

*Pelochrista maculiferana* (Kennel) was described from a single male specimen collected in the Guberlinsky Mountains, South Ural in 1892. No additional specimens have been reported since. Razowski (1999: 481) synonymised *maculiferana* with *Epiblema junctanum* (Herrich-Schäffer, 1856), and this opinion was followed in several subsequent publications (e.g., Razowski 2001, 2003; Sinev & Nedoshivina 2008; Lepiforum 2011).

During an expedition to the southern Urals in late June 2003, I collected two male specimens of a peculiar small tortricid moth in the Guberlinsky Mountains, Orenburg district. After dissecting one of them, it became obvious that the genitalia exhibited characteristics typical for the genus *Pelochrista* (see Razowski 2003). However, I was unable to find a comparable illustration in the literature. A few years later, I studied leafrollers in the collection of ZIN with special attention to two specimens of *Pelochrista maculiferana*, which were externally identical to the newly-collected specimens from southern Ural and were collected from the same locality. The specimens were not dissected, but the valvae of the holotype were sufficiently exposed to see the essential characteristics (see below). Based on facies and male genitalia, these two specimens are undoubtedly conspecific with the holotype of *maculiferana*.

The labels of the type specimens of *P. maculiferana* are somewhat confusing. The description is based on a single specimen labelled "Guberli, 19.6.1892, Christoph [leg.]". The holotype in ZIN lacks the label with date and collector, and the red holotype label is not the original one. The second specimen is labelled as paratype, but no paratypes were designated by Kennel (1900).

The habitats in the Guberlinsky Mountains are steppe hills with steep, xerothermic rocky slopes (Fig. 1). The recently-collected specimens were swept in late afternoon

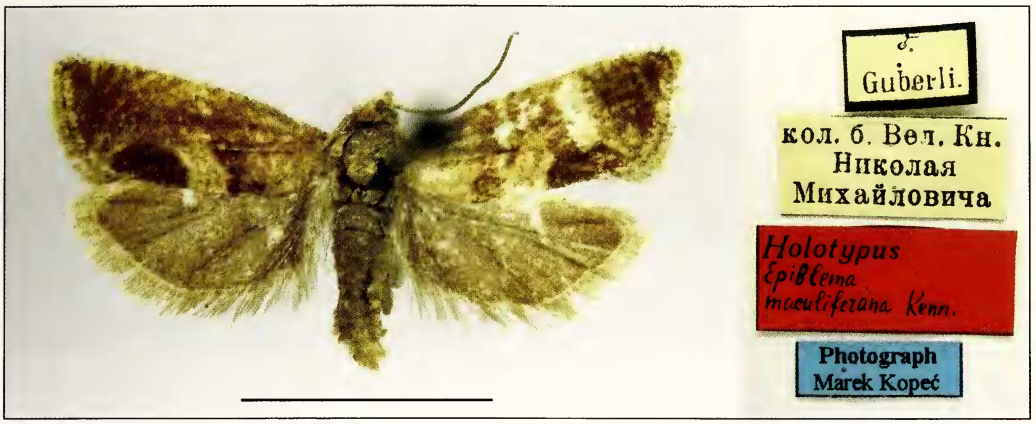



**Fig. 3.** Imago of *Pelochrista maculiferana* (Kenn.) (male, holotype; S Ural; ex. coll. ZIN). Scale = 5 mm.

from *Inula salicina* L. (Asteraceae), which is reported as a host plant for *E. junctanum* (Buhl et al. 1999). The known specimens of *P. maculiferana* have been observed in the second half of June, but the flight period probably extends into mid-July. The species is known only from the type locality, the Guberlinsky Mountains in the southern Ural range. The redescription of the moth and description of the male genitalia are given below.

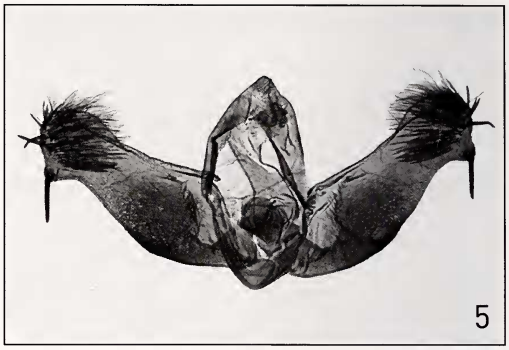
### *Pelochrista maculiferana* (Kennel, 1900), bona sp., comb. nov.

*Epiblema maculiferana* Kennel, 1900, Dt. ent. Z. Iris 13: 152, pl. 5 fig. 28.
*Epiblema junctanum* (Herrich-Schäffer, 1856), auct. Razowski 2003, nec. Kennel 1900.

M a t e r i a l . Holotype ♂, **Russia**, '♂ | Guberli <white label with black edges>; coll. of Grand Duke | Nikolai | Mikhailovich [Romanov] <white label, text in Russian>; Holotypus | Epiblema | maculiferana (Kenn.) <red label>; Photograph | Marek Kopeć <blue label>' (ZIN). – Paratype: ♂, same data (ZIN). – Other material: 2♂♂, Russia, S Ural, Orenburg district, 51°15'N 58°08'E, 340 m, Orsk 40 km W, near Guberlja village, 26.vi.2003, leg. K. Nupponen. Genitalia slide: K. Nupponen prep. no. 1/2.i.2005.

**Diagnosis.** *P. maculiferana* is rather easily distinguished from other known species of the genus *Pelochrista* both externally and by the characters in the male genitalia. The moth is small, and the rusty brown forewings with a distinct dorsal patch surrounded by large dark blotches are characteristic. The male genitalia are unmistakeable, and readily separated from the other known species of *Pelochrista* by a very thick neck of the valva and a rounded cucullus with one ventral and two distal spines. In the original description of *P. maculiferana*, the species was compared to *E. junctanum*. In the latter species, the forewings are greyish or fuscous, the dorsal patch is wider and not divided into two areas, the dorsal blotches are smaller and blackish, the hindwings are much paler, and the male genitalia are completely different.

**Redescription** (Figs 3, 4). H e a d : Vertex rusty brown; antenna concolourous; labial palp yellowish brown, inner surface paler. T h o r a x : Tegulae, collar, and thorax rusty brown. Legs pale rusty brown, hindlegs paler. Wingspan: 12.0–12.5 mm. Forewing with costal fold to 1/3, basally broad, apex rather pointed; ground colour rusty brown,


**Figs 4–5.** *Pelochrista maculiferana* (Kenn.). **4.** Male, wingspan 12 mm (S Ural, Guberli 26.vi.2003). **5.** Male genitalia (S Ural; slide KN 1/02.i.2005).

scattered black scales over wing surface, more frequently in distal fourth; dorsal patch dirty white, consisting of two parallel lines angled outwards, reaching mid-wing; dorso-postbasal and tornal blotches dark brown, latter somewhat extended; apical half of costa with distinct strigulae; inner spots of speculum indistinct; cilia line blackish, fringe paler than forewing. Hindwing dark fuscous, cilia line distinct, fringe paler than wing. Underside of wings unicolourous fuscous, except costa of forewing pale yellowish brown. Abdomen: Dark fuscous. Male genitalia (Fig. 5) with uncus short, rounded. Socii rather long, bent and hairy. Tegumen 1.5 × higher than wide. Valva robust, ventral incision almost absent, neck thick; cucullus round and hairy, ventrally with long and stout spine; two further spines at middle of apical margin. Sacculus 0.4 × length of valva, caudal edge indistinct. Vinculum short and rounded. Phallus half length of valva, thick, slightly bent at 0.4, apical third tapered, cornuti absent (or lost during mating, but their sockets are invisible).

## Records of eight species of Tortricidae

The dates and localities of records for each species are given, as well as the known distributional range and basic information about the bionomy. Data on the geographical range of the species are from Kuznetsov (1989), Kuznetsov et al. (1996), Razowski (2002, 2003), and Sinev & Nedoshivina (2008).

### *Phtheochroa exasperantana* (Christoph, 1872) **Fig. 6**

Material. **Russia**, Astrahan district, 48°08–09'N 46°49–52'E, -15–100 m, Baskunzak salt lake SW, Bogdo Hill, 2♂♂, 26.viii.2006, 1♂, 28.viii.2006, leg. K. Nupponen; 47°34'N 47°01'E, -5 m, Sasykoli village 3 km NE, Peski Voniutchie, 3♀♀, 29.viii.2006, leg. K. Nupponen; 48°02–03'N 46°37–40'E, 5 m, Peski Thikili near Bogdo village, 2♂♂, 1♀, 30.viii.2006, leg. K. Nupponen.

**Distribution.** Russia (Lower Volga), Tajikistan; recently recorded from the Ustyurt range in SW Kazakhstan (K. Nupponen, unpublished).

**Remarks.** The species inhabits desert steppes and semideserts in the northern Caspian Sea region. The flight period extends from the last third of August to late September.

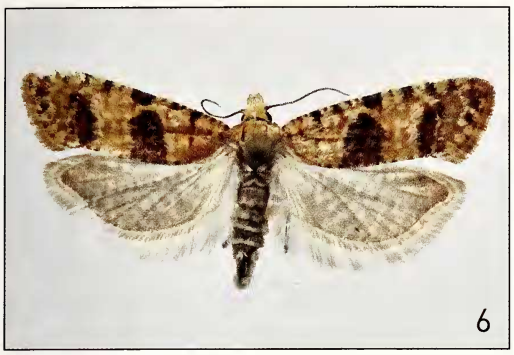




**Fig. 6.** *Phtheochroa exasperantana* (Christ.). Female, wingspan 16.5 mm; Lower Volga, near Bogdo 30.viii.2006). **Fig. 7.** *Eugnosta medvedevi* (Geras.). Female, wingspan 22 mm; Lower Volga, by Ilovla village 5.ix.2002).

The larva feeds on *Caroxylon laricinum* (Pall.) Tzvelev (Chenopodiaceae) (Anikin et al. 2006). *P. exasperantana* is easily distinguished from related species by its ochreous forewings with well-defined dark brown subterminal and median fasciae, the dorsal part of the latter is very broad forming a roundish blotch. The male and female genitalia are illustrated by Razowski (2002: pl. 6 fig. 58; pl. 44 fig. 58). The two adults illustrated by Razowski (2002: pl. IV figs 58 & 58a) as *P. exasperantana* are actually *P. krulikowskii* (Obraztsov, 1944). *P. exasperantana* has less elongated ochreous forewings, with a dorsally broad and subcostally cut off dark brown median fascia. Based on examination of a lot of material of both species (several hundreds of *P. krulikowskii* from S Ural, Lower Volga, and W Kazakhstan, and over 30 exx of *P. exasperantana* from Lower Volga and W Kazakhstan), it is clear that *P. krulikowskii* is externally a very variable species. It seems that specimens that are somewhat doubtful as to their identification are usually mottled forms of *P. krulikowskii*, and not *P. exasperantana*. With this on mind, the two species are fairly easy to separate from each other both by the external appearance and by the male genitalia.

### *Eugnosta medvedevi* (Gerasimov, 1928) Fig. 7

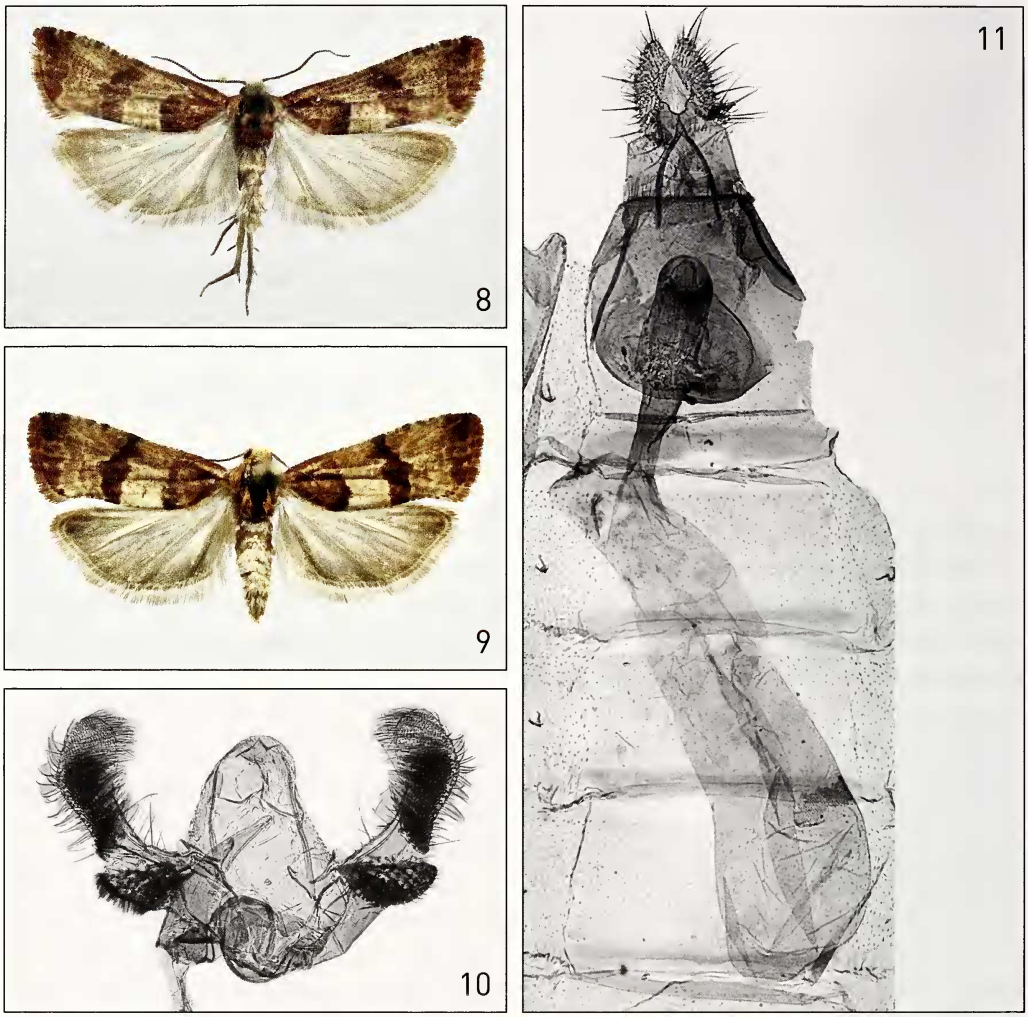
Material. **Russia**, Volgograd district, 49°14–19'N 43°43–56'E, 60 m, Ilovla village 10 km WSW, 20 exx, 5.ix.2002, leg. K. Nupponen.

**Distribution.** Ukraine, Russia (Lower Volga). New to Russia.

**Remarks.** This species was previously known only from the type series collected in eastern Ukraine. The habitat in the Russian locality is a sandy steppe. The moths are nocturnal and came to artificial light. The male and female genitalia are illustrated by Razowski (2002: pl. 14 fig. 136; pl. 50 fig. 136).

### *Clepsis nybomi* (Hackman, 1950)

Material. **Russia**, S Ural, Bashkiria/Cheliabinsk district, 54°33'N 58°50'E, 900 m, Iremel Mountains, 1♂, 25.vi.1996, leg. K. Nupponen.




**Figs 8–11.** *Lobesia subherculeana* (Fil.). **8.** Male, wingspan 19 mm; S Ural, Schibendy Valley 7.vi.1998). **9.** Female, wingspan 19 mm; S Ural, Schibendy Valley 23.vi.1999). **10.** Male genitalia (S Ural; slide KN 1/8.i.2012). **11.** Female genitalia (S Ural; slide KN 2/5.i.2012).

**Distribution.** Finland, N Sweden, Russia (S Ural). First record outside Fennoscandia, new to Russia.

**Remarks.** The moth was observed at 0830 hr flying slowly about 1 m above the ground; it landed on a branch of *Picea abies* (L.) H. Karst. (Pinaceae). The habitat where it was collected is a taiga forest with luxurious lower vegetation. For further notes on the species, see Bengtsson (2004).

### *Lobesia subherculeana* (Filipjev, 1924) Figs 8–11

Material. **Russia**, S Ural, Orenburg district, 50°40–41'N 54°27–28'E, 170–230 m, Pokrovka village 20 km S, Schibendy valley, 2♂♂, 7.vi.1998, 1♂, 21.vi.1999, 2♂♂, 22.vi.1999, 2♀♀, 23.vi.1999, leg. T. & K. Nupponen; Ibidem, 1♀, 2.vii.2003, 1♂, 21.viii.2006, leg. K. Nupponen; 51°22–23'N 56°48'E,

130–340 m, Donskoje village 4 km W, Verbljushka, 1♂, 27.viii.2000, 3♂♂, 28.viii.2000, 3♀♀, 9.ix.2002, 1♂, 27.vi.2003, 1♂, 28.vi.2003, 1♂, 2♀♀, 6.ix.2009, leg. K. Nupponen. Genitalia slides: K. Nupponen prep. no. 1/8.i.2012 (♂), 2/5.i.2012 (♀).

**Distribution.** Russia (Krasnojarsk district, Tuva Rep., S Ural). Recently recorded also from W Kazakhstan (K. Nupponen, unpublished). The present records are the westernmost, representing the first from the Urals and from Europe.
**Remarks.** Externally *L. subherculeana* resembles *L. indusiana* (Zeller, 1847), but the former is much larger (wingspan: range 14–20 mm, mainly 18–19 mm) and the forewing pattern elements have greater contrast. The moths were observed on xerothermic rocky steppe slopes (Fig. 2). The species occurs in two generations in June and from late August through first third of September.

### *Asketria lepta* Falkovitsh, 1964 **Figs 12–15**

Material. **Russia**, S Ural, Orenburg district, 50°40–41'N 54°27–28'E, 170–230 m, Pokrovka village 20 km S, Schibendy valley, 1♀, 1.vii.2003, 1♂, 2.vii.2003, 2♀♀, 3.viii.2005, 1♂, 20.viii.2006, leg. K. Nupponen. Genitalia slides: K. Nupponen prep. no. 2/11.x.2005 (♂); 1/5.i.2012 (♀).

**Distribution.** SE Kazakhstan, Mongolia, Russia (S Ural). New to Russia and Europe.
**Remarks.** This species inhabits chalk steppes in South Ural (Fig. 2). The flight period extends from late June into the second half of August, possibly representing two generations. Falkovitsh (1964) reported *Atraphaxis virgata* (Reg.) Krassn. (Polygonaceae) as a larval host plant.

### *Thiodia irinae* Budashkin, 1990

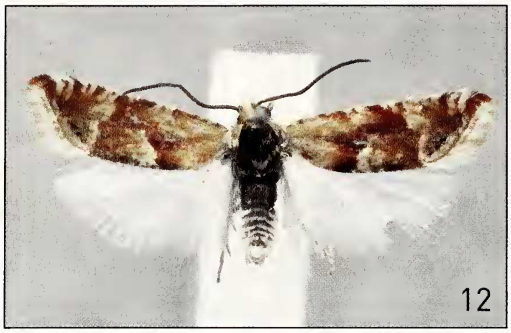
Material. **Russia**, S Ural, Orenburg district, 51°22–23'N 56°48'E, 130–340 m, Donskoje village 4 km W, Verbljushka, 1♀, 30.v.1998, leg. T. & K. Nupponen, genitalia preparation preserved in glycerol; Cheliabinsk district, 52°39'N 59°34'E, 320 m, Arkaim reserve near Amurskii village, 1♀, 15.vi.1999, leg. K. Nupponen.

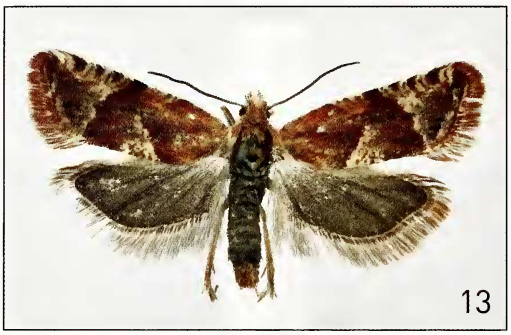
**Distribution.** Ukraine (Crimea), Russia (Lower Volga, S Ural). Recently recorded from W Kazakhstan (K. Nupponen, unpublished). The present records are the easternmost known and the first from the Urals.
**Remarks.** The larva feeds on leaves of *Galatella villosa* (L.) Rchb. f. (Asteraceae) (Razowski 2003). The adult and male and female genitalia are illustrated by Razowski (2003).

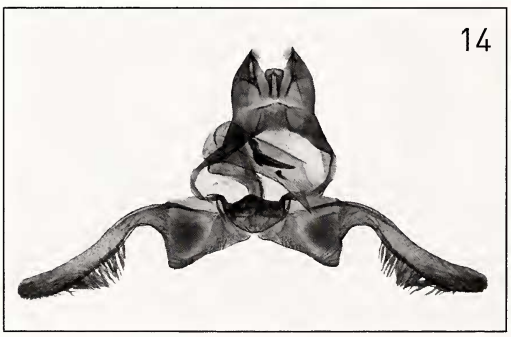
### *Eucosma pergratana* (Rebel, 1914) **Fig. 16**

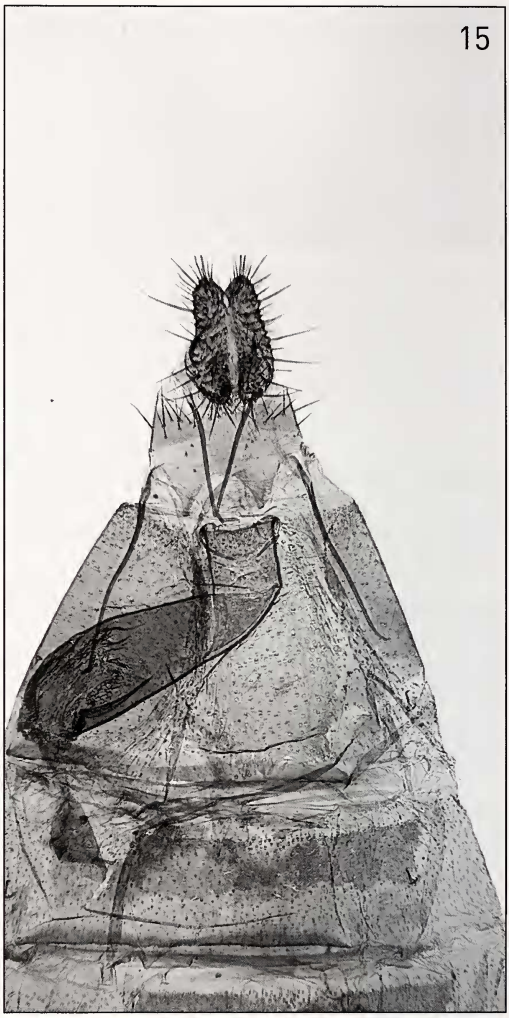
Material. **Russia**, S Ural, Cheliabinsk district, 53°01'N 62°02'E, 185 m, Ajat River near Nikolaevka village, Sokolovskaja Gora, 1♀, 24.vii.1998, 1♀, 25.vii.1998, leg. K. Nupponen.

**Distribution.** Russia (Tuva Rep., Transbaikalia, S Ural), Kazakhstan, Kyrgyzstan, Mongolia, China. The present records are the westernmost known and the first from the Urals and Europe.
**Remarks.** The moths were observed on a xerothermic rocky steppe slope along a river. The male genitalia are illustrated by Kuznetsov (1989).



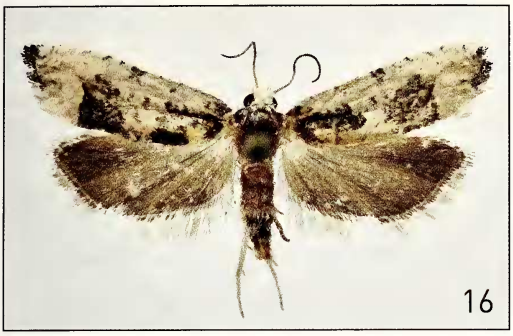

**Figs 12–15.** *Asketria lepta* Flkv. **12.** Male, wingspan 9 mm; S Ural, Schibendy Valley 20.viii.2006). **13.** Female, wingspan 11 mm; S Ural, Schibendy Valley 1.vii.2003). **14.** Male genitalia (S Ural; slide KN 2/11.x.2005). **15.** Female genitalia (S Ural; slide KN 1/5.i.2012).

### *Dichrorampha alaicana* Rebel, 1910 **Figs 17–18**

Material. **Russia**, S Ural, Cheliabinsk district, 53°56–57'N 59°03–04'E, 500–600 m, near Moskovo village, 1♂, 10.vii.1997, 1♂, 12.vii.1998, leg. K. Nupponen; Ibidem, 1♂, 26.V.1998, 1♂, 18.vi.1998, leg. T. & K. Nupponen. Genitalia slide: K. Nupponen prep. no. 3/5.i.2012 (♂).

**Distribution.** C Asia (mountain ranges of Kazakhstan, Kyrgyzstan and NW China), Russia (Altai, Tuva, S Ural). The present records are the westernmost known and the first from the Urals and Europe.

**Remarks.** The species occurs on rocky steppe slopes in the Urals. In Southern Siberia and Central Asia it inhabits steppes and dry meadows in mountain ranges.





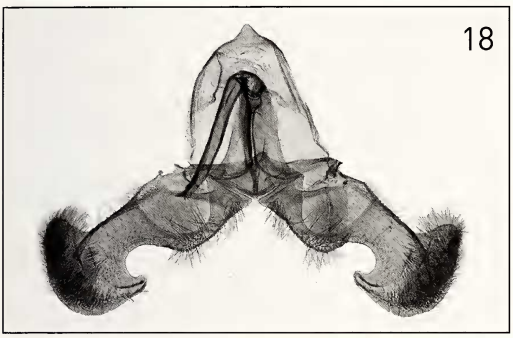



**Fig. 16.** *Eucosma pergratana* (Rbl.). Female, wingspan 17 mm (S Ural, Ajat River 25.viii.1998). **Figs 17–18.** *Dichrorampha alaicana* Rbl. **17.** Male, wingspan 16 mm (S Ural, Moskovo 26.v.1998). **18.** Male genitalia (S Ural; slide KN 3/5.i.2012).

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